

show the character of the head; and the skeleton of the head is in preparation for the Norwich museum, where the teeth and skull can be examined by those who may wish to test the above description.

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V.—*Descriptions of new or imperfectly described Diurnal Lepidoptera.* By EDWARD DOUBLEDAY, Esq., Assistant in the Zoological Department of the British Museum, F.L.S. &c.

[Continued from vol. xvi. p. 308.]

Fam. PIERIDÆ.

Genus PIERIS.

*Pi. Habra.* *Pi. alis omnibus supra albis, anticis costa ad basin, macula discoidali, alteraque marginis externi, magnaue apicis in qua maculæ tres albæ, nigris, posticis supra nervulis juxta marginem tæpe nigris, subtus pallidis, fusciscenti, flavo, alboque variis, vitta ad basin miniacea.* Expans. alar. 2 unc. 7 lin. vel 66 millim.

*Hab.* Honduras.

Anterior wings pure white, the costa at the base black, irrorated with white, the apex broadly and triangularly black, the outer margin marked below the middle with a rounded black spot united to the black of the apex, the disco-cellular nervule marked with a dot of the same colour. Posterior wings pure white, the nervules at their extremities slightly black. Below, the anterior wings are marked nearly as above, but the apical markings are very pale brown, and the light spots are of a pale yellow instead of white; the base is shaded with fuscous along the costal, subcostal and median nervures. Posterior wings below very pale brown, slightly pearly, the nervures and nervules, a series of lines along the cellular folds, two lines in the cell, a large spot about the middle of the anterior margin, and the outer margin broadly pale fuscous; four bright yellow vittæ extend from the base along the cellular folds for about two-thirds of their length, of which one is above the subcostal nervure, the others between the cell and the abdominal margin; between the median nervules are two spots of the same colour and opposite to the disco-cellular nervule is a third; the black outer margin is marked with a series of white spots, slightly tinted with yellow; the costa is miniaceous at the base.

Head black with a few white hairs on the vertex; palpi black above, varied with white below; antennæ black, the apex white.

Thorax clothed with long gray hairs. Legs white, with a black line on each side of the femora and tibiæ.

Abdomen white.

In the collections of the British Museum and W. W. Saunders, Esq.

The only specimens I have seen of this species were brought home by Mr. D. Dyson, who found them in an Indian cane at some distance from Balize.

*Pi. Clemanthe.* Pi. alis anticis utrinque nigris, albo irroratis vittisque, posticis supra albidis, fimbria lata marginali nigra, in qua maculæ sex albidæ; subtus luteis, macula baseos miniacea; nervis, fimbriaque lata marginali, in qua maculæ quatuor luteæ, tresque albidæ, nigris. Exp. alar. 3 unc. 6 lin. vel 90 millim.

*Hab.* Moulmein.

Anterior wings black, the base and inner margin irrorated with white, the cell with four not very well defined vittæ; two similar ones between the median and radial nervures, followed at some distance by a geminate spot near the outer margin; six others not well-defined, especially about the middle of their course, run between the subcostal, discoidal and median nervules. Posterior wings covered near the abdomen with very long hairs, of a very light cream-colour or whitish, the outer margin broadly bordered with black, the black colour extending along the nervules, this black border with six whitish spots between the nervules. Below, anterior wings slightly glossed with bronzy, less irrorated with white than above, the markings more defined, especially towards the inner margin, which is nearly white. Posterior wings bright yellow, the base with a round miniaceous spot, the nervures and nervules black, the fimbria rather narrower than above, marked with four large yellow spots, followed by three whitish ones.

Head and thorax grayish; antennæ black, marked with white below; abdomen white.

In the collection of the British Museum.

In the form of the wing and in the colouring of the upper surface this species resembles the female of *Pi. Hyparete*; but in the colouring of the under surface and the more important character of the neuration of the wing it is allied to *Pi. Autothisbe*. I have only seen the specimen in the Museum collection.

*Pi. Lea.* Pi. alis anticis maris supra albis, margine externo nigro, posticis albis, macula magna ad angulum ani læte aurantiaca, margine externo anguste nigro, subtus, anticis fuscescentibus, vitta lata in cellulam, fascia pone cellulam maculari, margineque interno late, albis; maculaque intra apicem flava, posticis flavis, fimbria lata marginis externi, in quò maculæ luteæ, nervisque nigris: fœminæ alis anticis supra fuscis, basi flavescenti irroratis, maculis vittisque albis signatis, posticis supra flavis, margine externo fusco, macula magna ad angulum ani brunnea; subtus flavis, nervis, nervulis, fimbriaque lata, in qua maculæ quatuor flavæ, fuscis. Exp. alar. 2 unc. 6 lin. vel 63 millim.

*Hab.* Moulmein and Sarawak.

All the wings of the male above white, the anterior with the base slightly irrorated with black, the costa narrowly black, the outer margin with a border of the same colour broad and deeply dentate internally towards the apex, narrower and less deeply dentate towards the anal angle, median nervure and outer part of the subcostal black. Posterior wings white, with a narrow black border dentate internally, the base itself pale yellow, the space between the cell and the inner and outer margins as far as the cellular fold between the middle and outer median nervule bright luteous orange. Below, the anterior wings are fuscous, with purplish and bronzy reflections, irrorated with yellow along the costa; a vitta in the cell, a transverse macular band beyond it, and the whole inner margin as far as the cell white; the apex with a short yellow band divided into three parts by the nervules. Posterior wings bright yellow, orange towards the anal angle, with a broad fuscous border in which is a distinct yellow spot towards the outer angle, and also some slight clouds of the same colour; costal, subcostal and median nervures black.

Female with the anterior wings above fuscous, the costa irrorated with pale yellow, a vitta in the cell, five vittæ beyond, of which the third is the shortest, a submarginal series of six not well-defined spots, and a spot on the inner margin yellowish white. Posterior wing yellow at the base and along the inner margin, the anal angle occupied by a large tawny brown patch, the outer margin broadly fuscous except at the anal angle, costal and subcostal nervules bordered with the same colour. Below, nearly as in the male, but paler.

Head and thorax clothed with grayish white hairs; antennæ black, ringed with white.

Abdomen black above, side yellowish.

In the collection of the British Museum.

This beautiful species, of which I have only seen the pair in the collection of the Museum and a specimen sent from Borneo by H. Low, Esq., jun., is closely allied to *Pi. Judith*.

*Pi. Rhena.* Pi. alis omnibus maris supra læte sulphureis costa anguste nigra, margine externo late nigro-fusco, supra, in anticis præsertim, flavo nebuloso, subtus, maculato; fœminæ supra albidis, anticis margine externo nigro, posticis serie marginali punctorum nigrorum; subtus, anticis albis margine externo fusco, lutescenti maculato, posticis lutescentibus puncto costali, margineque externo, fuscis, hoc lutescenti maculato. Exp. alar. 2 unc.—2 unc. 3 lin. vel 50—64 millim.

*Hab.* Ashanti.

Above, the male is bright sulphur-yellow, the costa of the anterior wings narrowly black, the outer margin of all the wings rather broadly fuscous, very much clouded with yellow on the

anterior wings, slightly so on the posterior; below, all the wings are rather paler, the outer margin of the posterior is marked with a series of seven somewhat oval yellow spots, that of the posterior with six lunulate ones, the costa of the posterior wing has a round fuscous spot beyond the middle.

Female above yellowish white, the costa of the anterior wings fuscous, the outer margin broadly and irregularly of the same colour; the posterior wings have an irregular fuscous spot at the outer angle, and on the outer margin four cuneiform spots: below, the markings are nearly the same as in the male, but the ground-colour of the anterior wings is nearly white, the costa and spots in the fuscous border lutescent; the posterior wings are marked nearly as in the male, but the border is more broken by the light spots; the ground-colour is lutescent and the costa at the base is luteous.

Head varied with black and yellow; antennæ black, spotted with white.

Thorax clothed with light yellowish hairs.

Abdomen pale yellow.

In the collection of the British Museum and W. F. Evans, Esq.

The only specimens I have seen of this species are a male in the Museum collection which I had considered as a variety of *P. Hedyle*, Cram., and a female in the collection of Mr. Evans. Knowing now both sexes of *P. Hedyle* and this species, I am quite sure of their distinctness. It is near to these that my *P. Ianthe* must be placed, though for some reasons this last seems nearer to *P. Calypso*. It is the *P. Pisinoë* of Dr. Boisduval's cabinet.

*Pi. Theora*. *Pi. alis anticis utrinque luteis, margine externo late nigro, nigredine intus dentato, posticis margaritaceis, albis, supra margine nigro, maculis utrinque submarginalibus nigris, subtus maculis marginalibus alteraque discoidali luteis.* Exp. alar. 2 unc. 6 lin. vel 60 millim.

*Hab.* Ashanti.

Anterior wings above bright luteous, the inner margin slightly paler, the outer margin broadly black at the apex, gradually less so towards the anal angle; this black border deeply sinuate opposite to the cell, dentate below the uppermost median nervule. Posterior wings pearly white, the outer margin narrowly and irregularly black, preceded by a series of six indistinct fuscous spots, those nearest the outer angle best defined. Below, the anterior wings are coloured as above, but the black margin is divided by a macular band composed of six spots, of which two are ovate near the apex, having between them a small linear one, the three following lunulate or cuneate. Posterior wings beautifully pearly white, the outer margin with a series of black spots on the ner-

vures, alternating with luteous ones placed on the folds between the nervures, these preceded by a submarginal series of black spots; there is a luteous spot on the disco-cellular nervule, and a faint one of the same hue between the median and radial nervures.

Head varied with white and black; antennæ black, spotted with white.

Thorax and abdomen yellowish white.

In the collection of the British Museum.

Allied to *P. Calypso*, but easily distinguished by its bright luteous upper wings and the beautiful pearly whiteness of the under surface of the posterior.

VI.—*Notes on Birds*. By T. C. EYTON, Esq., F.L.S.

No. V.

[With a Plate.]

[Continued from vol. viii. p. 47.]

*Aramus scolopaceus*, Bon. (male).

THE œsophagus at its upper extremity is when inflated half an inch in diameter, but is dilated near its middle into an oval crop fully two inches in diameter and three in length; there is also another slight enlargement immediately above the proventriculus: the total length of the œsophagus from the epiglottis to the proventriculus is thirteen inches. The proventriculus is one inch in diameter and nearly two in length when inflated; its upper portion is fleshy and thickened, but the coats become thinner as it becomes more expanded; it is contracted immediately above the stomach. The stomach is moderately muscular and slightly oval. The epithelium is hardened and rugose towards its lower portion. The greatest length of the gizzard is two inches, and its greatest diameter is one and a half inch. The small intestine is a quarter of an inch in diameter, and uniform from the gizzard to the rectum, and two feet three inches in length. The cæca are of moderate size, and consist of sacs three-quarters of an inch in diameter for two-thirds of their length and contracted to a quarter of an inch before their entrance into the rectum; they are slightly larger near the middle than at their upper extremity. The right cæcum measures three inches in length, the left two and a half inches. The rectum is seven and a half inches in length, and very slightly larger than the small intestine. The cloaca is of moderate size, measuring half an inch in diameter, and with the coats not much thickened.

The trachea is of small diameter for the size of the bird, and largest at its upper and lower extremities; at the distance of three inches above the bronchiæ, it is convoluted towards the right side on itself, the form of which will be best explained by the Plate. The bony rings become much stronger and more massive above the bronchiæ, and have a larger interval of membrane between them; they